

Section-A(MCQ's)

Q.1 Choose the correct answer for each from the given options:

- (i) The unit of force in S.I unit is _____
 (a) Kilogram (b) Newton (c) Metre (d) Second
- (ii) Clockwise torque is considered as _____ torque.
 (a) Positive (b) Negative (c) Unit (d) Zero
- (iii) The number of protons in the nucleus is called _____.
 (a) Mass number (b) Avogadro number (c) Atomic number (d) Nuclear number
- (iv) The lightest particle in an atom is _____.
 (a) Neutron (b) Electron (c) Proton (d) Deuteron
- (v) The speed of sound in air at normal temperature and pressure is _____ m/s.
 (a) 336 (b) 672 (c) 712 (d) 785
- (vi) The standard metre is made of _____ and is placed at the international bureau of weight and measure in Sevres near Paris.
 (a) Platinum and copper (b) Iron and copper (c) Iron and iridium (d) Platinum and iridium
- (vii) Energy possessed by a body due to its position is called _____.
 (a) Potential energy (b) Mechanical energy (c) Kinetic energy (d) None of these
- (viii) If the effort on the lever is between the fulcrum and weight, the class of lever is called _____.
 (a) First (b) Second (c) Third (d) None of these
- (ix) In case of satellites the necessary acceleration is provided by _____.
 (a) Frictional force (b) Gravitational force (c) Coulomb's force (d) None of these
- (x) The eye and the camera are similar because the image formed in both is _____.
 (a) Real and inverted (b) Real and erect (c) Virtual and inverted (d) Virtual and erect
- (xi) The speed of light is _____ m/s.
 (a) 3×10^8 (b) 3×10^6 (c) 1.86×10^6 (d) 3×10^{10}
- (xii) Elasticity of a substance depends on its:
 (a) Temperature (b) Size (c) Nature (d) None of these
- (xiii) All the rays, parallel to the principal axis, falling on the concave mirror, pass after reflection through its _____.
 (a) Pole (b) Principal focus (c) Centre of curvature (d) None of these
- (xiv) If the force acting on a body is doubled, then the acceleration produced is _____.
 (a) Quarter (b) Half (c) Same (d) Double
- (xv) Dr. Abdul Salam was awarded Nobel Prize for his work on _____.
 (a) Electronics (b) Radiation (c) Gravitation (d) Grand unification theory
- (xvi) The reason for bursting water pipes during very cold weather is that:
 (a) Water pipe contracts when cooled (b) Water expands on freezing (c) Ice expands on melting (d) None of these
- (xvii) The galvanometer can be converted into an ammeter by connecting a wire of low resistance _____
 (a) In series (b) In parallel (c) With 220 volts (d) In combined way

Section-B

(Short Answer)

Note: Answer any EIGHT of the following questions. Each question carries 05 marks.

- Q.2 What is Physics? Enlist some important branches of physics.
- Q.3 What is meant by anomalous expansion of water? Describe its effects on every day life.
- Q.4 Define reflection of light. State the laws of reflection.
- Q.5 What are the main defects of human eye? How are they removed?
- Q.6 How is rainbow formed?
- Q.7 Define momentum. Explain the law of conservation of momentum with the help of examples.
- Q.8 How can a vector be determined if its rectangular components are known?
- Q.9 State Coulomb's law and define the unit of charge.
- Q.10 Describe the construction of a simple pulley.
- Q.11 Describe stress and strain.
- Q.12 The time taken by an electron to complete one rotation about its nucleus is 0.5×10^{-18} seconds. Convert it into minutes, hours and microseconds.
- Q.13 Explain vibrations, time period and frequency in sound.

Section-C

(Descriptive Answer)

Note: Answer any TWO of the following questions. Each question carries 14(7 + 7) marks.

- Q.14 (a) How can we determine the mass of earth by applying law of Gravitation?
 (b) A bus is moving with the velocity of 72 km/h. On the application of the brakes it stops after covering a distance of 500 m. Find the retardation of the bus.
- Q.15 (a) Define Hooke's law and Young's modulus.
 (b) A series circuit consisting of three resistors having resistance 40 ohms, 50 ohms and 20 ohms respectively, is connected across each resistor.
- Q.16 (a) Define centre of gravity. How would you locate the centre of gravity of an irregular piece of metal sheet?
 (b) A boy of mass 50 kg on a motor bike is moving with 20 m/s. What is his kinetic energy?